इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 5260 to 5266 (1969): Buzz-track test film (16 mm) (IS 5260 : 1969 to IS 5266 : 1969 in one volume) [MED 32: Photographic Equipment]

"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

BRUTUM FULMEN
IGNORANTIA JURIS NON EXCUSAT
PROTECTED BY COPYRIGHT

IS : 5260 - 1969
to
IS : 5266 - 1969
(Reaffirmed 2005)

Indian Standard

SPECIFICATIONS FOR TEST FILMS FOR 16 mm SOUND-AND-PICTURE CINEMATOGRAPH PROJECTORS

UDC 771·531·352 : 778·534·45

© *Copyright* 1969

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 1

Price Rs ~~6·00~~ *December* 1969

Revised Pr [illegible] Gr 5

Indian Standard

SPECIFICATIONS FOR TEST FILMS FOR 16 mm SOUND-AND-PICTURE CINEMATOGRAPH PROJECTORS

Cinematographic Equipment Sectional Committee, ETDC 47

Chairman	*Representing*
Shri P. N. Deobhakta	Directorate General of Technical Development, New Delhi
Members	
Shri Balraj Bhanot (*Alternate* to Shri P. N. Deobhakta)	
Dr B. M. Adalja	Film Federation of India, Bombay
Shri S. N. Agarwal	Cinecita Private Limited, Bombay
Dr H. P. Bhattacharya	Ministry of Defence, Department of Defence Production, New Delhi
Sqn Ldr D. P. Mukherjee (*Alternate*)	
Shri J. N. Bisaria	Films Division, Ministry of Information and Broadcasting, Bombay
Dr A. F. Chhapgar	National Physical Laboratory (Acoustics Division) (CSIR), New Delhi
Shri Y. R. Chauhan	Cinesales Corporation, Delhi
Shri R. S. Chauhan (*Alternate*)	
Shri Bhupon Ghosh	Cine Mechanical Works, Calcutta
Shri Manna Ladia (*Alternate*)	
Shri P. H. Kapila	Kine Engineers, Bombay
Shri A. Majid Kazi	Amco Engineering Corporation, Madras
Shri P. N. Kohli	Department of Audio Visual Education, New Delhi
Shri N. P. Bhattacharya (*Alternate*)	
Shri B. A. Mistry	In personal capacity (*Hari Niwas, Bombay*)
Shri M. E. Nagarajan	Photophone Equipments Limited, Bombay
Shri R. Rajagopalan (*Alternate*)	
Shri M. Sankaralingam	Directorate General of Supplies and Disposals, New Delhi
Shri G. R. Bhatia (*Alternate*)	
Shri K. S. Sarma	National Physical Laboratory (Optics Division) (CSIR), New Delhi
Shri U. S. Saxena	Film Institute of India, Ministry of Information & Broadcasting, Poona
Dr M. A. Thomas	Hindustan Photo Films Manufacturing Co Ltd, Ootacamund
Shri Y. S. Venkateswaran, Director (Elec tech)	Director General, ISI (*Ex-officio Member*)

Secretary

Shri T. Rajaraman
Deputy Director (Elec tech), ISI

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 1

Indian Standard

SPECIFICATIONS FOR TEST FILMS FOR 16 mm SOUND-AND-PICTURE CINEMATOGRAPH PROJECTORS

0. FOREWORD

0.1 These Indian Standards were adopted by the Indian Standards Institution on 31 May 1969, after the drafts finalized by the Cinematographic Equipment Sectional Committee had been approved by the Electrotechnical Division Council.

0.2 With the preparation of the specification for 16 mm sound-and-picture cinematograph projectors (*see* IS : 4497-1968*), it has become necessary to provide a basis for specifying the requirements of test films. These standards form a series of standards and are intended to cover the following test films.

a) Buzz-track test film,
b) Sound-focusing test film,
c) Registration test film,
d) Multi-frequency test film,
e) 3 000 Hz flutter test film,
f) Sound-and-picture test film, and
g) 400 Hz signal level test film.

0.3 Care should be taken by users of these test films that the characteristics of the films are not altered by shrinkage due to incorrect storage conditions. Recommendations on the storage of 16 mm films and determination of shrinkage of film stock are given in Appendix A and Appendix B (*see* P 17) respectively.

0.4 The requirements of these standards are based on B.S. 1488 : 1948 'Test films for 16 mm cinematograph projectors' issued by the British Standards Institution and the relevant standards for test films of the Society of Motion Picture Television Engineers, U.S.A. and United States of America Standards Institute.

0.5 For the purpose of deciding whether a particular requirement of these standards is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in these standards.

---

*Specification for 16 mm portable sound-and-picture cinematograph projectors.
†Rules for rounding off numerical values (*revised*).

Indian Standard
SPECIFICATION FOR BUZZ-TRACK TEST FILM

UDC 771·531·352 : 778·534·45

1. SCOPE

1.1 This standard covers the requirements of buzz-track test film for 16 mm sound-and-picture cinematograph projectors.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in Indian Standard Glossary of terms for cinematography (*under preparation*) shall apply.

3. DESCRIPTION

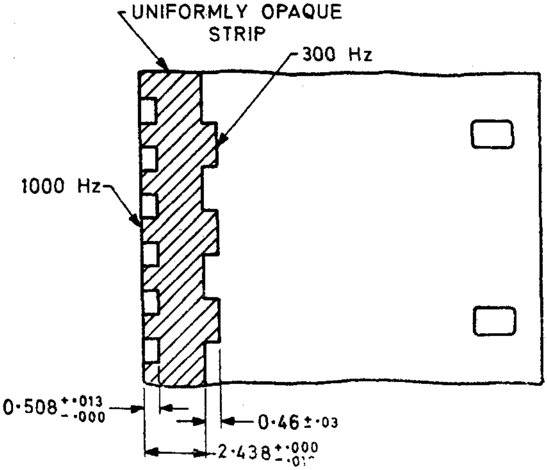
3.1 Buzz-Track Test Film — The film is used for checking scanning-beam setting. The film has a sound track with an 1·93 mm opaque centre, a frequency of 300 Hz on the picture side and a frequency of 1 000 Hz on the other side. These tracks are accurately located on the film so that when the film is run on a projector which is correctly adjusted and free from weave, no sound will be heard. Either the 1 000 Hz or the 300 Hz tone will be heard if the scanning-light beam is incorrectly set.

NOTE — If the scanning-beam is out of focus or is too long, a minimum amount of the mixed 300 Hz and 1 000 Hz tones will be heard with neither predominating.

4. REQUIREMENTS

4.1 Test Film — The test film shall have originally recorded 300 Hz and 1 000 Hz signal tracks on either side of a central exposed strip. The position of the tracks shall be in accordance with the dimensions shown in Fig. 1.

4.2 Density — The central exposed strip and the exposed parts of the two signal tracks shall have a density of $1{\cdot}0\,^{+0{\cdot}4}_{-0{\cdot}0}$


UNIFORMLY OPAQUE STRIP
300 Hz
1000 Hz
$0{\cdot}508^{+\cdot013}_{-\cdot000}$
$0{\cdot}46\pm{\cdot}03$
$2{\cdot}438^{+\cdot000}_{-\cdot01}$

All dimensions in millimetres.

FIG. 1 BUZZ-TRACK TEST FILM

4.3 Film Stock — The film stock used for the test film shall be cut and perforated in accordance with the requirements of Indian Standard dimensions for 16 mm motion-picture film (*under preparation*).

4.4 Shrinkage — The film stock used for the test film shall have a maximum lengthwise shrinkage of 0·5 percent, when tested by the method described in Appendix B.

4.5 Length — The nominal length of the test film shall be 30 m.

5. IDENTIFICATION

5.1 Identification — The test film shall be marked 'Buzz-Track'. This marking shall be printed lengthwise in the picture area, the spacing between consecutive titles shall be approximately 30 cm.

Indian Standard

SPECIFICATION FOR SOUND FOCUSING TEST FILM

UDC 771·531·352 : 778·534·45

1. SCOPE

1.1 This standard covers the requirements for sound focusing test film for 16 mm sound-and-picture cinematograph projectors.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in Indian Standard glossary of terms for cinematography (*under preparation*) shall apply.

3. DESCRIPTION

3.1 Sound Focusing Test Film—This film is used to facilitate adjustment of the focus and azimuth of the sound-optical system.

4. REQUIREMENTS

4.1 Test Film — The test film shall have an originally-recorded sound track, heavily overmodulated and developed to a high contrast, so that the track is essentially a square-wave track.

4.2 Types — The test films shall be of the following two types and the purchaser shall state, when ordering a film, which of these types is required:

Type A — 7 000 Hz recording for precision adjustment of sound focusing

Type B — 5 000 Hz recording for quick field adjustment of sound focusing

4.3 Accuracy — The sound track shall have correct azimuth within plus or minus 5 minutes of arc.

4.4 Length — The nominal length of the test film shall be 30 m.

5. IDENTIFICATION

5.1 Identification — Each film of type A shall be marked '7 000 Hz focusing'. Each film of type B shall be marked '5 000 Hz focusing'. The marking shall be printed lengthwise in the picture area and the spacing between consecutive titles shall be approximately 30 cm.

Indian Standard

SPECIFICATION FOR REGISTRATION TEST FILM

UDC 771·531·352 : 778·554·4

1. SCOPE

1.1 This standard covers the requirements for registration test film for 16 mm sound-and-picture cinematograph projectors.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in Indian Standard glossary of terms for cinematography (*under preparation*) shall apply.

3. DESCRIPTION

3.1 This film is intended to provide in a single test film of high accuracy several quantitative visual tests that have always been difficult to perform. They are as follows:

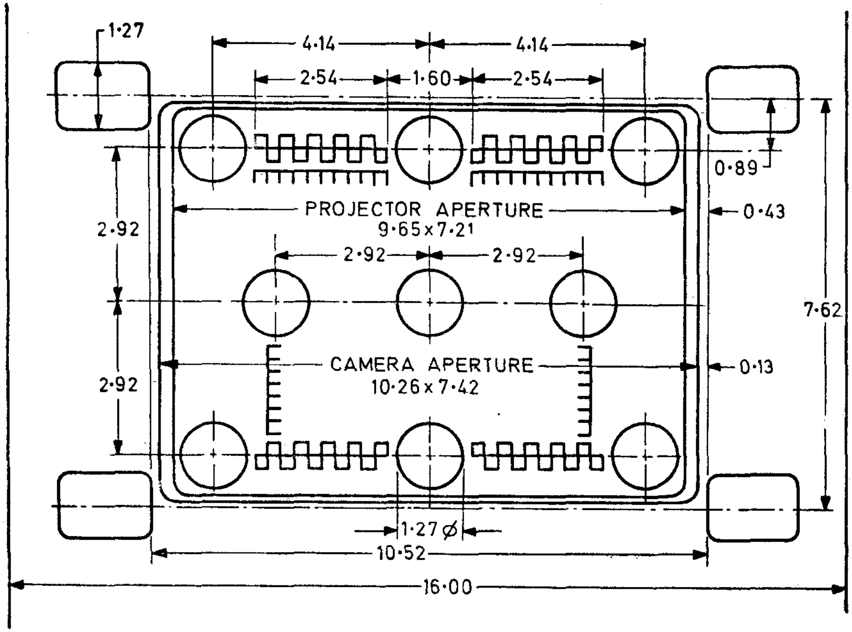
a) Projector steadiness,
b) Projector aperture alignment,
c) Projector shutter adjustment (travel ghost),
d) Projector framing accommodation,
e) Projector focusing,
f) Optical printer alignment,
g) Optical projector focusing,
h) Contact printer resolution,
j) Contact printer weave,
k) Contact printer double-exposure alignment,
m) Contact printer (step) steadiness,
n) A frame of this film may be used in a camera aperture for aligning a title stand, and
p) By laying the scale on this film emulsion to emulsion on a sound record, its location may be measured.

4. REQUIREMENTS

4.1 If the film is projected to 76·2 × 101·6 cm it shall be enlarged 100 times.

4.2 The test film shall be a positive print from an original negative having a black background with all copy white or transparent. The film stock used shall have high resolution and shall be accurately perforated on both edges, one frame interval at a time so that the steadiness of each frame will be in respect to its perforation.

4.3 The dimensions should be obtained from Fig. 1 and adjusted to units of 0·025 4 mm and either represent the ideal condition or on average 25·4 mm practice. For instance, the outside rectangle represents the camera aperture and the rectangle just inside the projector aperture. The inside line should project on the screen. If the camera aperture line should show in projection it would present an extremely large projector aperture.



All dimensions in millimetres.

Aperture dimension to be in accordance with Indian Standard dimensions for 16 mm motion-picture film (*under preparation*).

FIG. 2 REGISTRATION TEST FILM

4.4 Resolution targets should be spaced one in the centre, four equidistant from the centre and one in each of the four corners. The outside diameter of target on the film is 1·27 mm and should fill the area covered by an average microscope using a 10 × objective.

4.5 The white blocks should be 0·254 mm square and should quickly indicate travel ghost caused by incorrect shutter adjustment. They also provide a quick check on the ability to frame above and below centre position.

4.6 The vertical rows of numbers 20, 30, etc, refer to lines per millimetre in the concentric rings of the resolution targets and also provide title size copy for rough focusing.

4.7 The scales provide detailed copy on the chart and represent 0·025 4 mm. These are helpful when film is double exposed in a printer to check registration.

4.8 The copy on either side of the centre target provides more fine detail and explains resolution targets.

4.9 The lines adjacent to the sprocket-hole outline provide a means for accurately adjusting the image of the master chart of the film while being photographed.

4.10 The triangular areas in the centres of the vertical and horizontal frame lines provide a means of measuring the amount of jump and weave and as a gauge for centring the film in the aperture laterally. Each line is 0·025 4 mm thick and spaced 0·054 mm. Count the white lines as 0·025 4 mm and the space in between as 0·025 4 mm. Two white lines and a space total 0·076 2 mm.

Indian Standard

SPECIFICATION FOR MULTI-FREQUENCY TEST FILM

UDC 771·531·352 : 778·554·4

1. SCOPE

1.1 This standard covers the requirements for multi-frequency test film for 16 mm sound-and-picture cinematograph projectors.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in Indian Standard glossary of terms for cinematography (*under preparation*) shall apply.

3. DESCRIPTION

3.1 Multi-frequency Test Film — This film is used to check the frequency response of the sound system. It is precisely calibrated and starts and ends with a reference frequency of 1 000 Hz.

4. REQUIREMENTS

4.1 Test Film

4.1.1 The test film shall contain the following series of frequencies in the order given:

Frequency Hz	*Length* cm
1 000	366
60	183
100	183
200	183
300	183
500	183
1 000	183
2 000	183
3 000	183
4 000	183
5 000	183
*6 000	183
*7 000	183
1 000	366

---

*These frequencies may be omitted at the option of the manufacturer of the test film.

4.1.2 Each frequency shall be positively identified by suitable marking.

4.2 Frequency Tolerance — The frequency of each recorded signal shall be correct to within ± 2 percent of the nominal frequency.

4.3 The test film shall have a splice-free, positive variable-area sound track, recorded so that the modulated light is substantially constant when the film is reproduced with a scanning beam of negligible width.

4.3.1 Modulation of the recording shall be 95 ± 5 percent at the highest frequency recorded. The level within any one frequency section shall be constant to within ±0·5 dB.

4.3.2 Flutter content shall be kept to a minimum.

4.3.3 The distortion of the recorded wave, up to a frequency of 3 000 Hz, shall not exceed 5 percent.

4.4 Film Stock — The film stock used for the test film shall be cut and perforated in accordance with the requirements of Indian Standard dimensions for 16 mm motion-picture film (*under preparation*).

4.5 Shrinkage — The film stock used for the test film shall have a maximum lengthwise shrinkage of 0·5 percent, when tested by the method described in Appendix B.

4.6 Calibration of Frequency Recordings — A calibration of the level of the frequency recordings shall be issued with each test film.

4.6.1 This calibration shall be in terms of light modulation at the photocell with a scanning beam of negligible width. The calibration shall be correct to within ±0·25 dB up to and including 3 000 Hz, and within ±0·5 dB above 3 000 Hz up to and including the highest frequency recorded. The correction for each frequency shall be so stated that it will give the true level, when the correction is added algebraically to the output level, measured using the film.

5. IDENTIFICATION

5.1 Film Identification — Each test film shall be provided with a suitable leader, title and trailer and shall be accompanied by a calibration of the level of the frequency recordings.

Indian Standard

SPECIFICATION FOR 3 000 Hz FLUTTER TEST FILM

UDC 771·531·352

1. SCOPE

1.1 This standard covers the requirements for 3 000 Hz flutter test film for 16 mm sound-and-picture cinematograph projectors.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in Indian Standard glossary of terms for cinematography (*under preparation*) shall apply.

3. DESCRIPTION

3.1 3 000 Hz Flutter Test Film — This film carries a 3 000 Hz tone, correct to within 25 Hz with an output-level constant within 0·25 dB. The total flutter content at the time of sale does not exceed 0·1 percent.

4. REQUIREMENTS

4.1 Test Film — The test film shall have either an originally recorded, direct playback positive variable-area sound track, or an originally recorded variable-density sound track, developed as a toe record. The recorded frequency shall be within ±25 Hz of the nominal 3 000 Hz frequency. The modulation of the recording shall be 80 ± 5 percent.

4.1.1 The output level of the film shall be constant within $\pm\frac{1}{4}$ dB. (This is equivalent to an amplitude tolerance of ±0·038 mm when recording variable area sound track with a nominal amplitude of 1·40 mm.)

4.1.2 The total rms flutter content of the film shall be less than 0·1 percent at the time of sale.

4.1.3 The wave-form distortion of the recording shall not exceep 5 percent.

4.2 Film Stock — The film stock used for the test film shall be cut and perforated in accordance with the requirements [*see* Indian Standard dimensions for 16 mm motion-picture film (*under preparation*)].

4.3 Shrinkage — The film stock used for the test film shall have a maximum lengthwise shrinkage of 0·5 percent, when tested by the method described in Appendix B.

4.4 Length — The nominal length of the test film shall be 116 m.

5. IDENTIFICATION

5.1 Identification — The test film shall have a suitable leader, title and trailer.

Indian Standard

SPECIFICATION FOR SOUND-AND-PICTURE TEST FILM

UDC 771·531·352 : 778·534·45

1. SCOPE

1.1 This standard covers the requirements for sound-and-picture test film for 16 mm sound-and-picture cinematograph projectors.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in Indian Standard glossary of terms for cinematography (*uuder preparation*) shall apply.

3. DESCRIPTION

3.1 Sound-and-Picture Test Film — This film, although primarily a sound test film, has accompanying picture, which may be used to check projection conditions. The film includes representative sound and picture samples of satisfactory quality, which illustrate the type of film that 16 mm sound projection equipment is expected to reproduce satisfactorily.

4. REQUIREMENTS

4.1 Test Film — The test film shall be a print of material originally photographed and recorded on 35 mm negative, with suitably re-recorded sound.

4.1.1 The film, although primarily a sound test film, shall have pictures to check projection.

4.1.2 The picture, music, and dialogue samples shall be as follows:

	Approximate Length m
Main title music (variable density track) with picture title briefly explaining the use of the film	13·7
Not less than three excerpts from studio feature releases, using variable area sound track	30 to 60*
Piano music, variable area sound track	8·5
Not less than three excerpts from studio feature releases, using variable area sound track	30 to 60*
End titles	1
Total length of film	122

4.2 Film Stock — The film stock used for the test film shall be cut and perforated in accordance with the requirements [*see* Indian Standard dimensions for 16 mm motion-picture film (*under preparation*)].

---

*Total length of both variable density and variable area excerpts approximately 90 m.

Indian Standard

SPECIFICATION FOR 400 Hz SIGNAL LEVEL TEST FILM

UDC 771·531·352

1. SCOPE

1.1 This standard covers the requirements for 400 Hz signal level test film for 16 mm sound-and-picture cinematograph projectors.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in Indian Standard glossary of terms for cinematography (*under preparation*) shall apply.

3. REQUIREMENTS

3.1 Shrinkage — The film stock used for the test film shall have a maximum lengthwise shrinkage of 0·5 percent, when tested by the method described in Appendix B.

3.2 Cutting and Perforating Dimensions — The film stock used for the manufacture of the test film shall conform to the dimensions for 16 mm stock [*see* Indian Standard dimensions for 16 mm motion-picture film (*under preparation*)].

3.3 Length — The length of the film shall be approximately 30 m. The section of the film containing the sound track shall be splice-free.

3.4 Sound Track

3.4.1 The test film shall have an originally recorded, direct-playback, positive variable-area sound recording at an amplitude of 1·22 ± 0·04 mm. Each film shall be measured for amplitude and the measurements shall be made at a point approximately mid-length of the film and at points between 1·5 m and 3 m from each end.

3.4.2 The frequency of the recording shall be 400 ± 8 Hz.

3.4.3 The density of the dark portion of the sound track shall be between 1·2 and 1·4. The density throughout the length of the film shall be as uniform as is consistent with the state of the art.

3.4.4 The combined base and fog density shall be 0·05 ± 0·01.

3.4.5 The total harmonic distortion of the recording shall not exceed 5 percent; and the fluctuation of the recorded level shall not exceed 2 percent.

3.4.6 Each film shall be run in a calibrated reproducer for the purpose of obtaining the level of recording; this level shall be compared with that of the controlled film of known characteristics and the difference shall be noted in the booklet furnished with each film.

NOTE — The level of the recording, as determined in **3.4.1** is approximately 2 dB below the level of a fully-modulated sound track.

4. IDENTIFICATION

4.1 Identification — The test film shall be marked '400 Hz signal level'. This marking shall be printed lengthwise in the picture area, and the spacing between consecutive titles shall be approximately 30 cm.

APPENDIX A

(*Clause* 0.3)

RECOMMENDATIONS ON STORAGE OF CELLULOSE ACETATE FILMS

A-1. CONTAINERS

A-1.1 The film should be kept, preferably wound, in cylindrical containers provided with a dust-tight lid and made of material which will have no deleterious effect on the film.

A-2. METHOD OF STORAGE

A-2.1 The innermost layer of the roll of film should not be wound to a diameter smaller than 3 cm, and it is desirable to use a suitable core for the film.

A-2.2 The film should be wound carefully and no attempt made to tighten the roll by pulling on one end of the strip; this would damage the film.

A-2.3 The outer layer of the film should be held in position by a paper strip or other means, such as an outer wrapping of waste film secured with adhesive tape. Rubber bands should not be used to secure the film, if stored in rolls.

A-3. STORAGE CONDITIONS

A-3.1 The containers holding the film should be stored in an atmosphere which should have a relative humidity of not less than 30 percent (to avoid brittleness) nor more than 75 percent (to avoid exudation of plasticizer and the sticking of the film).

A-3.2 The temperature should not be less than 0°C nor more than 40°C.

APPENDIX B

(*Clause* 0.3)

DETERMINATION OF SHRINKAGE OF FILM STOCK

B-1. At least 20 strips of film approximately 80 cm in length shall be cut for measurement of shrinkage. After normal development and drying at a temperature not exceeding 27°C, the strips shall be placed at least 6·4 mm apart in racks and kept for 7 days in an oven maintained at 50° ± 2°C and a relative humidity of 20 percent.

B-2. The strips shall then be removed, reconditioned thoroughly to 50 percent relative humidity at 20° ± 2°C and the shrinkage measured by a suitable method.

B-3. The percent shrinkage shall then be calculated on the basis of deviation from the nominal dimension for the length of 100 consecutive perforation intervals given in Indian Standard dimensions for 16 mm motion-picture film (*under preparation*).

INDIAN STANDARDS
ON
Cinematographic Equipment

IS:		Rs
4495-1968	Method of measurement of light output of cinematograph projectors (for narrow gauge film)	2·00
4496-1968	Screen luminance for the projection of 16 mm film by incandescent lamps	2·50
4497-1968	16-mm portable sound-and-picture cinematograph projectors ...	3·50
5260-1969 to 5266-1969	Test films for 16 mm sound-and-picture cinematograph projectors ...	6·00

PUBLICATIONS OF INDIAN STANDARDS INSTITUTION

INDIAN STANDARDS

Over 5000 Indian Standards, broadly classified under the following main heads, have been issued so far:

Agriculture & Food
Chemical
Civil Engineering
Consumer Products
Electrotechnical
Mechanical Engineering
Structural & Metals
Textile

Of these, the standards belonging to the Electrotechnical Group fall under the following categories:

- Acoustics
- Appliances
- Automobile Electrical Equipment
- Batteries
- Cinematographic Equipment
- Conductors and Cables
- Electric Welding Equipment
- Electrical Instruments
- Electron Tubes and Valves
- Electronic Components and Equipment
- Environmental Testing Procedures
- Fans
- High Voltage Techniques
- Illuminating Engineering
- Instrument Transformers and Relays
- Insulating Materials
- Insulators and Accessories
- Integrating Meters
- Lamps and Accessories
- Lifts and Escalators
- Lightning Arresters
- Motors and Generators
- Mica
- Nomenclature and Symbols
- Power Capacitors and Converters
- Semiconductor Devices
- Switchgear and Controlgear
- Transformers
- Winding Wires
- Wiring Accessories

OTHER PUBLICATIONS

	Rs
ISI Bulletin (Published Every Month)	
Single Copy	3·00
Annual Subscription	25·00
Annual Reports (from 1948-49 Onwards)	2·00 to 3·00 each

---

Handbook of ISI Publications, 1969 (Pages vi + 546, Price Rs 10·00)
incorporating annotations on all Indian Standards, and also listing
ISO Recommendations and Publications of IEC

Available from

INDIAN STANDARDS INSTITUTION

Headquarters

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 1

Telephanes 27 36 11 - 20
27 50 31 - 40

Telegrams Manaksanstha

Branch Offices

Telegrams Manaksanstha

534 Sardar Vallabhbhai Patel Road	**Bombay 7**	**Telephone**	**35 69 44**
5 Chowringhee Approach	**Calcutta 13**	,,	**23 - 18 23**
5-9-201/2 Chirag Ali Lane	**Hyderabad 1**	,,	**3 23 35**
117/418 B Sarvodaya Nagar	**Kanpur 5**	,,	**82 72**
54 General Patters Road	**Madras 2**	,,	**8 72 78**

Printed at Arcee Press, New Delhi, India